ABSTRACT

A flooded cell type lead-acid battery includes a separator-filter material that is enveloped around a porous electrode, housed in a frame and placed in a cell compartment horizontally from it's opposite electrode. Flow is moved up through a porous electrode assembly using a miniature corrosion resistant pump. The separator filter material allows electrolyte to pass uniformly between electrodes and return from top overflow in a closed loop continuous flow. The resulting economically efficient battery assembly exhibits increased efficiency and cycle life by reducing the layer of hydrogen gas and sulfates coating the electrode reaction, and short-circuiting between vertical cell group.